

EFFECTIVE DELAYED, MINIMIZED SWITCHING, BTB WRITE VIA RECENT ENTRY QUEUE THAT HAS THE ABILITY TO DELAY DECODE

ABSTRACT OF THE DISCLOSURE

Disclosed is a method and apparatus providing the capability to supplement a branch target buffer (BTB) with a recent entry queue. A recent entry queue prevents unnecessary removal of valuable BTB data of multiple entries for another entry. Additional, the recent entry queue detects when the latency of the BTB's startup latency is preventing it from asynchronous aiding the microprocessor pipeline as designed for and thereby can delay the pipeline in the required situations such that the BTB latency on startup can be overcome. Finally, the recent entry queue provides a quick access to BTB entries that are accessed in a tight loop pattern where the throughput of the standalone BTB is unable to track the throughput of the microprocessor execution pipeline. Through the usage of the recent entry queue, the modified BTB is capable of processing information at the rate of the execution pipeline thereby accelerating the execution pipeline.